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APPLICATION
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TITLE: AN ARRANGEMENT FOR FIXING A WINDSCREEN
WIPTER BLADE TO AN ARM

APPLICANT: Pascal VACHER

22511

PATENT TRADEMARK OFFICE

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AN ARRANGEMENT FOR FIXING A WINDSCREEN WIPER BLADE TO
AN ARM

5 The present invention relates to an arrangement
for fixing a windscreen wiper blade to an arm.

It concerns more precisely an arrangement for
fixing a windscreen wiper blade to an arm, this blade
having a transverse pivot spindle intended for pivoting
connection with the arm.

10 In a known fashion, such a blade is adapted to a
specific type of arm referred to as the yoke type as it
has an end with a U-shaped profile made from steel
sheet produced by rolling around the arm. According to
a known embodiment, an independent piece called an
15 adapter is mounted on the blade, this adapter being
provided with facing orifices on its flanges and
intended to be snapped onto the spindle and the end of
the U-shaped arm is fitted and locked on this adapter,
the opening of the U being directed towards the blade.

However, these yoke arms are complex and expensive with regard to their manufacture.

To resolve this problem and to allow the mounting of arms with a particularly simple design consisting of arms with an end rod, the invention proposes an arrangement for fixing a windscreen wiper blade to an arm, the said blade having a through transverse pivot spindle intended for the pivoting connection with the arm and the arm having an end rod, characterised in that it comprises an independent piece known as an adapter mounted on the blade and in which the rod is fitted longitudinally.

According to a preferred embodiment, the adapter has a U-shaped cross section whose flanges each have an orifice for snapping onto the spindle and an end of which, referred to as the entry end, is open, and the adapter has means for the transverse and longitudinal locking of the arm.

Advantageously, a longitudinal locking means consists of an articulated part provided with a tenon fitted in an orifice arranged on the rod, when the latter is fitted.

In this case, preferably, this locking means consists of a cross-member articulated on the adapter by means of at least one flexible tongue, carrying the tenon and forming with the web of the adapter, at its entry end, a channel for positioning the rod.

Advantageously, another longitudinal locking means consists of a housing arranged on the adapter in which a stop on the rod comes into engagement, when the

latter is fitted.

In this case, preferably, the said housing is arranged on the web of the adapter close to its end opposite to the entry end and the said stop is arranged
5 at the end of the rod.

The housing can be conformed by virtue of a profiled snapping-in rib on the internal surface of the adapter and the stop can be a profiled catch at the end of the rod.

10 In addition, preferably, the adapter comprises at least one fixed cross-member for the transverse locking of the rod.

Preferably, the web of the adapter is provided with a longitudinal opening allowing passage of the rod
15 while it is fitted.

The invention is described below in more detail with the help of the figures showing only one preferred embodiment of the invention.

Figure 1 is a perspective view of the fixing
20 arrangement according to the invention.

Figure 2 is a similar perspective view in longitudinal section.

Figure 3 is a view in longitudinal section of the fixing arrangement according to the invention.

25 Figures 4 to 6 are front views illustrating the fitting of the arm rod.

The fixing arrangement according to the invention is depicted in Figures 1 to 3.

30 An arm 2 is mounted on a blade (1, 3, 5, 4). This arm 2, connected in a known fashion to a rotation

drive, allows the movement of the blade on the window of a car, in particular. This blade (1, 3, 5, 4) is of a known type and has a through transverse pivot spindle 4 fixed to a piece 5 integral with the pieces 1 and 3
5 consisting of the wiper arm and its reinforcement vertebrae. Such a blade is in a known manner intended to receive an independent piece called an adapter, on which an arm with a yoke is fitted.

The invention makes it possible to mount an end
10 arm as a rod for fitting in an adapter 6.

To do this, the plastic adapter 6 is a piece with a U-shaped cross section whose flanges 6A, 6B each have an orifice for snapping onto the spindle 4 and whose end 6C, referred to as the entry end, is open. This
15 entry end 6C is intended to receive the end rod of the arm 2.

The adapter 6 also has means for the transverse longitudinal locking of the fitted arm.

A first longitudinal locking means consists of an
20 articulated part consisting of a cross-member 7 articulated on the adapter by at least one flexible tongue 8 and carrying a tenon 9. As will be described below more precisely, this tenon 9 is fitted in an orifice 10 arranged on the rod 2 when the latter is
25 fitted. This cross-member 7 forms with the web 6D of the adapter at its entry end 6C a channel for positioning the rod.

A second longitudinal locking means consists of a housing 11 arranged on the internal surface of the web
30 6D of the adapter and in which a stop 12 on the rod

engages, when the latter is fitted. This housing 11 is arranged close to the end opposite to the entry end 6C and this stop 12 is arranged at the end of the rod of the arm 2. Advantageously, this housing 11 is formed by virtue of a profiled snapping-in rib 14 and the stop 12 is a profiled catch at the end of the rod.

The adapter also has at least one fixed cross-member 13 for transverse locking of the rod. This cross-member 13 is arranged at a free position between the two ends of the adapter, having regard to the size of the piece 5 supporting the spindle 4.

The web 6D of the adapter is provided with a longitudinal opening 15 allowing the passage and fitting of the rod when it is slipped in, as will now be described with reference to Figures 4 to 6.

The adapter 6 is mounted on the arm 2 after it is fitted on the spindle 4. To do this, as depicted in Figure 4, the positioning channel formed by the cross-member 7 and the web 6D of the adapter is opened by moving the cross-member 7 downwards (looking at the figure) by virtue of the elastic deformation of the tongue 8. To assist this manipulation, the flanks of the cross-member 7 are provided with gripping ribs 7A.

With its end inclined upwards (looking at the figure), the end of the rod of the arm 2 is introduced into this channel over a certain length and passes into the longitudinal opening 15. Thus the rod is easily slipped above the fixed cross-member 13. When the end of the rod is close to the end of the opening 15 opposite to the entry opening 6C, as depicted in Figure

5, the rod is folded towards the inside of the adapter.

It then suffices to push it longitudinally, as depicted in Figure 6, in order to snap its stop 12 into the housing 11 of the adapter.

5 Advantageously, the rod of the arm 2 and the adapter 6 are profiled so that the slipped-in rod fits flush with the external surface of the web 6D level with the longitudinal opening 15 of the web 6D of the adapter, for aerodynamic, aesthetic and size reasons.

10 The rod is therefore non-rectilinear, with an inclined shape at its end in order to be housed under the web 6D of the adapter. For its part, the adapter is raised close to its entry opening 6C, where it forms a bridge 6E between the entry opening 6C and the longitudinal

15 opening 15.